The state-owned engineering and shipbuilding company Valmet Oy is the parent company of the Valmet Group, which employs over 20.000 people in Finland and overseas. The main product lines are paper machines, power machinery, specialized vessels, tractors and logging equipment, rolling stock, materials handling equipment, diesel engines, process control instruments, automation systems, hunting and sporting arms, and defense equipment.

The company's defense equipment production goes back more than fifty years. Valmet is the main supplier of defense equipment to the Finnish Defense Forces, the main products being automatic light infantry weapons, basic trainer aircraft, naval vessels, ammunition and related components for light artillery.

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VALMET M 76 SEMI-AUTOMATIC RIFLE MANUAL©

VALMET M 76 SEMI-AUTOMATIC RIFLE MANUAL

Fig. 1. 7.62 Rifle M 76

I Construction and operation

1. VALMET M 76 operates automatically utilizing gas pressure by means of a gas piston for loading, firing and extracting the cartridge case. The rate of single shot fire is about 20—30 aimed rounds per minute. Weight to the rifle is approx. 3.7 kgs without bayonet or magazine. Weight of the loaded magazine is 0.9 kgs.

2. The main components of the rifle are: (Fig. 1)

1. Cover with rear sights
2. Return body with spring
3. Slide with gas piston
4. Gas cylinder
5. Bolt assembly
6. Body assembly with front sights
7. Bayonet
8. Sling
9. Magazine
10. Cleaning set

3. A prong-type flash-suppressor with bayonet socket is attached to the muzzle.

4. The magazine housing and the magazine catch in the bottom of the receiver.
The receiver cover is removable and on the right side of the cover are the ejecting port and a groove for the cocking handle. The rear sight is attached to the receiver cover.

5. The loading and breech mechanism consists of the bolt, slide, gas cylinder and return body with spring.

6. The trigger mechanism consists of the trigger, disconnector with spring, hammer, firing spring (which also acts as a trigger spring), change lever and safety sear.

7. By moving selector lever the rifle can be set for semi-automatic fire, or on safety. When using semi-automatic fire the selector lever is set in the lowest position and on safety in the uppermost position.

8. When pulling the slide assembly backwards with the cocking handle, the return spring is compressed, the hammer is cocked, and in the magazine the cartridge rises up into loading position.

9. When the cocking handle is released, the recoil spring throws the slide and the bolt forwards, the bolt picks up the cartridge and pushes it into the chamber and the extractor claw seizes the base of cartridge. The groove in the slide forces the bolt to turn and to engage in the locking recesses.

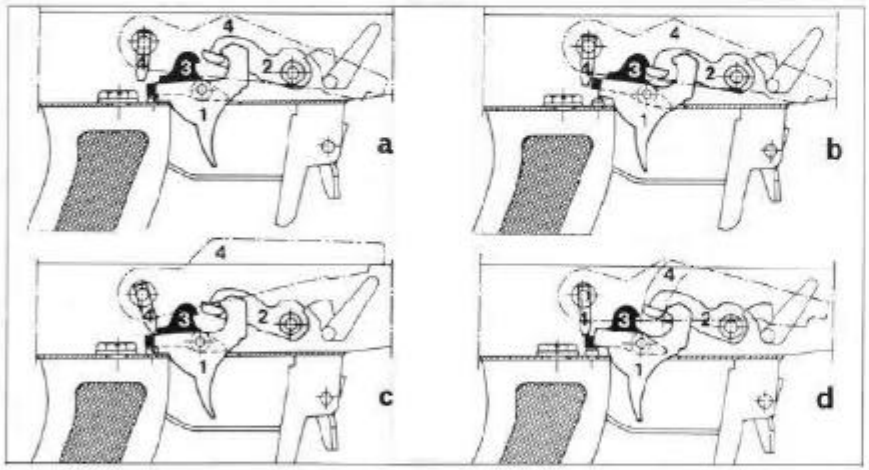


Fig. 2

a) The rifle set on semi-automatic fire, trigger released
   1. Trigger 3. Disconnector
   2. Hammer 4. Change lever
b) The rifle set on semi-automatic fire, trigger pulled
c) The rifle set on safety
d) The rifle set on automatic fire

10. Squeezing the trigger frees the hammer to strike the firing pin which is thrown forwards and ignites the primer. When the bullet has passed the gas port in the barrel, some of the powder gas escapes through the gas port into the gas cylinder, and the gas pressure actuates the bolt slide backwards by means of the gas piston. When the carrier has moved backwards approx. 15 mm, the groove in the slide turns the bolt. The carrier and the bolt continue to move together backwards. The cartridge case is ejected. Impelled by the recoil spring the slide and the bolt are thrown forward thus loading a new cartridge from the magazine into the chamber.

11. When the rifle is set on semi-automatic fire (selector lever in the lowest position) the hammer remains cocked after every round. The trigger has to be freed forward before the next round.

12. Selector lever in the middle position for semi-automatic fire.

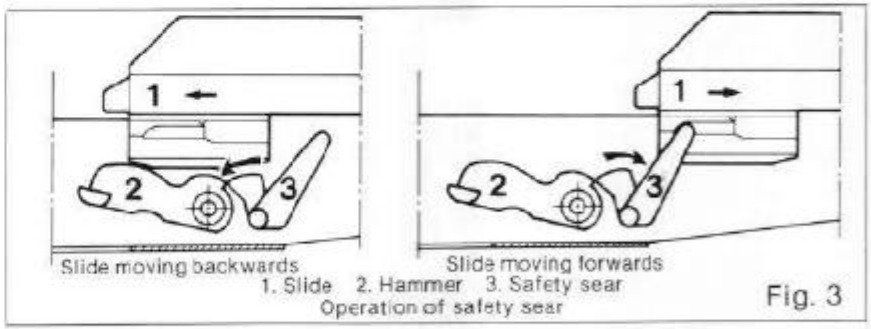
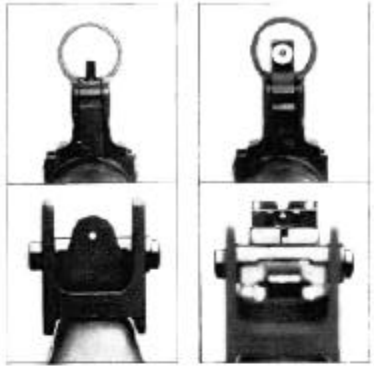


Fig. 3

13. Setting the rifle at safe (selector lever in the uppermost position) blocks the trigger movement, and thus the hammer can not be released.

14. Front sights

The rifle has a post front sight with a tunnel-guard. The tunnel helps to align sights and prevents glare. The post-tunnel assembly is laterally adjustable with two adjusting screws. The tunnel assembly has a built-in night sight post with a luminous spot which gives a clear sight spot in total darkness. The night sight post is folded down during daytime.



Rear sights

The rear sight is basically a conventional leaf sight with range adjustment from 100 to 600 m, with a special rearmost stop for 150-m range. The leaf has a peep sight blade, adjustable in height. When the leaf is turned forward through 180 degrees, the rear sight with two luminous spots becomes visible. The night sight position is separately adjustable in height with an adjusting screw.

15. Bayonet

The rifle can be furnished with a knife bayonet, fixed on the flash suppressor. The fixed bayonet does not affect accuracy. The bayonet can also be used as a knife.

Attaching the bayonet

The rifle is taken to the loading position, the bayonet is pulled out from the scabbard with the right hand, and pressing the locking knob with the fingers, the bayonet is placed on the flash-suppressor.

Fig. 5.

16. Cleaning set

The cleaning set consisting of a three-piece steel cleaning rod, a cleaning brush, a plastic oil bottle and a screw driver. Fig. 6.

Fig. 6.

II Loading the magazine

17. For loading, the magazine is taken in the left hand with the convex side against the palm. The rounds are inserted one by one into the magazine by pressing the cartridge at the same time straight downwards with the thumb of the left hand. The base of the cartridge must be pushed against the rear wall of the magazine thus enabling it to go down when inserting the next round. This is repeated until the magazine is full (the magazine takes 15 rounds) or until the required number of cartridges has been inserted.

To empty the magazine, take it in the left hand (concave side against the palm). The cartridges are pushed out from the magazine with the thumb of the right hand. This is repeated until the magazine is empty.

III Loading and unloading the rifle

Fig. 7

18. The rifle has to be set at safe position at all times, except when firing, and if handling or preparedness demand otherwise. The rifle is taken to the loading position by holding the handguard in the left hand. Then the magazine is taken in the right hand and is inserted in the magazine housing, front corner first, and pushed at the bottom until the magazine catch is locked. Fig.7.

19. The magazine is removed taking the rifle to the loading position, pressing the magazine catch with the thumb of the right hand, and pulling the magazine out from the housing. Fig. 8.

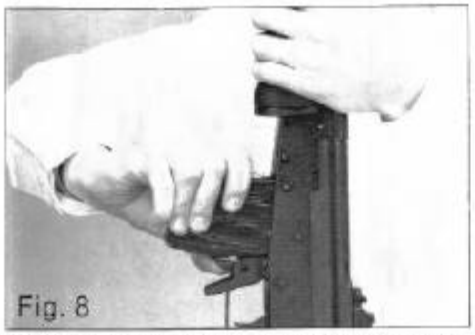


Fig. 8

20. To unload the rifle it is taken to the loading position and the magazine is removed. The safety is released and after that, resting the butt in the armpit, the cocking handle is gently pulled backwards. The cartridge that has been in the barrel drops through the magazine housing into the left hand kept under the magazine housing. The bolt carrier is allowed to go forward. Holding the rifle in the loading position it is fired, and set on safety.

IV Disassembling the rifle

Fig. 9

21. The selector lever is set on automatic fire. The left hand grasps the receiver cover near the sight. The catch in the rear end of the cover is pressed forward with the thumb of the right hand, and the cover is lifted off with the left hand. Fig. 9.

The right hand grasps the recoil spring catch pushing it first forward where the end of the guide is removed from its grooves. The recoil spring assembly is pulled out from the boring in the slide lifting it slightly upwards. Fig. 10.

Fig. 10

The bolt carrier and the bolt are moved to the rear by pulling the cocking handle with the right hand. By lifting the cocking handle, the bolt carrier and the bolt can be removed from the receiver. Fig. 11.

Fig. 11

The bolt is separated from the carrier with the left hand so that the bolt is first pushed to the rear and it is rotated one quarter of a turn to the right. Thereafter the bolt is pulled out from the carrier.
The piston protection tube is removed by pulling it rearwards.

V Assembling the rifle

22. The piston protection tube is pushed home with the right hand. The bolt carrier is taken in the right hand and the bolt in the left hand. The bolt is inserted in the carrier by pulling it first from the front to the rear and, thereafter, rotating the bolt to the left, it is pushed to the front. Holding the bolt in its place with the right hand fingers, the carrier is inserted in the receiver by pushing the gas piston end into the protection tube and pressing the guide ribs of the carrier into the corresponding grooves in the rear end of the receiver. The bolt carrier is pushed to the front.

Holding it with the right hand, the recoil spring assembly is pushed into the boring in the bolt carrier. The rear end of the guide is inserted in the groove in the rear end of the receiver by pressing the spring first forwards and downwards, and thereafter letting the guide move gently to the rear.

The receiver cover is placed with the right hand, first inserting the front end of the cover in the groove in the rear end of the piston protection tube, and then pressing the cover down so that the catch in the end of the recoil spring guide fits into the cutting in the rear end of the cover.

VI Malfunctions and corrections

Round is not fired

23. If the round is not fired, the bolt should not be opened immediately, but a period of 5 seconds has to be allowed for possible late-firing. Failure can be caused by defective cartridge, broken firing pin, damaged trigger spring or dirty bolt mechanism.
Failure is corrected by re-cocking the rifle. If the rifle still does not function, the bolt has to be cleaned or the defective part changed for a new one.

Fired case is not ejected

24. If the expended case is not ejected, the reason may be a broken extractor, a damaged ejector or a dirty chamber and/or bolt end.
Unless the expended case can not be ejected by moving the bolt, it has to be removed with the cleaning rod. The chamber and the bolt have to be cleaned. Broken parts are repaired or changed.

Bolt cannot be closed

25. If the bolt does not completely close, the reason might be a broken recoil spring or dirt in the loading and breech mechanism or gas cylinder.
Failure is remedied by pushing the cocking handle so that the slide moves to the front. If, however, operation is not perfect after that, the loading and breech mechanism has to be removed, cleaned and oiled. Damaged recoil springs or bolt carriers have to be replaced.

Bolt does not move completely to the rear position

26. If the bolt does not move completely to the rear position, the reason may be that the loading and breech mechanism is dirty or the gas port is choked.
Failure is remedied by re-cocking the rifle. If operation is still not perfect, the rifle has to be cleaned and oiled.

Failure to feed into chamber

27. If a new round is not passed into the chamber, the reason may be that the magazine is battered or dirty, or the magazine spring is damaged, or the expended case has not been ejected.
Failure is remedied by re-cocking the rifle, but before that the incorrectly fed cartridge has to be removed. If the rifle still does not function, the magazine has to be changed, or the expended case has to be removed from the chamber.